

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1. (Original) An isolated immunogenic peptide of 50 or fewer amino acids comprising an amino acid sequence $X_1X_2X_3PSAPSPX_4$ (SEQ ID NO:5), wherein:
 X_1 can be any amino acid;
 X_2 can be L, M, A, I, V, or T;
 X_3 can be a hydrophobic residue, methionine or alanine; and
 X_4 can be V, M, L, A, I, or T.
2. (Currently amended) An immunogenic peptide of claim 1, wherein X_1 is tyrosine (SEQ ID NO:34).
3. (Currently amended) An immunogenic peptide of claim 1, wherein X_2 is leucine (SEQ ID NO:35).
4. (Currently amended) An immunogenic peptide of claim 1, wherein X_3 is methionine (SEQ ID NO:36).
5. (Currently amended) An immunogenic peptide of claim 1, wherein X_4 is valine (SEQ ID NO:37).
6. (Original) An immunogenic peptide of claim 1, which peptide comprises an amino acid sequence selected from the group consisting of GVFPSAPSPV (SEQ ID NO:6), YVFPSAPSPV (SEQ ID NO:7), GLFPSAPSPV (SEQ ID NO:8), GVMPSAPSPV (SEQ ID NO:9), YLFPSAPSPV (SEQ ID NO:10), and GLMPSAPSPV (SEQ ID NO:11).
7. (Original) An immunogenic peptide of claim 1, which peptide is a ten amino acid peptide having an amino acid sequence selected from the group consisting of

GVFPSAPSPV (SEQ ID NO:6), YVFPSAPSPV (SEQ ID NO:7), GLFPSAPSPV (SEQ ID NO:8), GVMPSAPSPV (SEQ ID NO:9), YLFPSAPSPV (SEQ ID NO:10), and GLMPSAPSPV (SEQ ID NO:11).

8. (Original) A composition comprising:

i) an isolated immunogenic peptide of fifty or fewer amino acids comprising the sequence of $X_1X_2X_3PSAPSPX_4$ (SEQ ID NO:5), wherein:

X_1 can be any amino acid;

X_2 can be L, M, A, I, V, or T;

X_3 can be a hydrophobic residue, methionine, or alanine ; and

X_4 can be V, M, L, A, I, or T; and,

ii) a pharmaceutically acceptable carrier.

9. (Currently amended) A composition of claim 8, wherein X_1 is tyrosine (SEQ ID NO:34).

10. (Currently amended) A composition of claim 8, wherein X_2 is leucine (SEQ ID NO:35).

11. (Currently amended) A composition of claim 8, wherein X_3 is methionine (SEQ ID NO:36).

12. (Currently amended) A composition of claim 8, wherein X_4 is valine (SEQ ID NO:37).

13. (Currently amended) A composition of claim 8, wherein said peptide comprises ~~comprising~~ an amino acid sequence selected from the group consisting of GVFPSAPSPV (SEQ ID NO:6), YVFPSAPSPV (SEQ ID NO:7), GLFPSAPSPV (SEQ ID NO:8), GVMPSAPSPV (SEQ ID NO:9), YLFPSAPSPV (SEQ ID NO:10), and GLMPSAPSPV (SEQ ID NO:11).

14. (Currently amended) A composition of claim 8, ~~which~~ wherein said peptide is a ten amino acid peptide having an amino acid sequence selected from the group consisting of GVFPSAPSPV (SEQ ID NO:6), YVFPSAPSPV (SEQ ID NO:7), GLFPSAPSPV (SEQ ID NO:8), GVMPSAPSPV (SEQ ID NO:9), YLFPSAPSPV (SEQ ID NO:10), and GLMPSAPSPV (SEQ ID NO:11).

15 -20. Canceled.

21. (Currently amended) A method of inhibiting growth of an XAGE-1-expressing cancer cell in a subject, said method comprising administering to said subject [[a]] a purified peptide of fifty or fewer amino acids, said peptide comprising a sequence of $X_1X_2X_3PSAPSPX_4$ (SEQ ID NO:5), wherein:

X_1 can be any amino acid;

X_2 can be L, M, A, I, V, or T;

X_3 can be a hydrophobic residue, methionine, or alanine; and

X_4 can be V, M, L, A, I, or T

wherein administration of said peptide to said subject stimulates or activates cytotoxic T lymphocytes, thereby inhibiting growth of said XAGE-1-expressing cancer cell.

22. (Currently amended) A method of claim 21, wherein X_1 is a tyrosine (SEQ ID NO:34).

23. (Currently amended) A method of claim 21, wherein X_2 is a leucine (SEQ ID NO:35).

24. (Currently amended) A method of claim 21, wherein X_3 is a methionine (SEQ ID NO:36).

25. (Original) A method of claim 21, wherein said peptide comprises an amino acid sequence selected from the group consisting of GVFPSAPSPV (SEQ ID NO:6),

YVFPSAPSPV (SEQ ID NO:7), GLFPSAPSPV (SEQ ID NO:8), GVMPSAPSPV (SEQ ID NO:9), YLFPSAPSPV (SEQ ID NO:10), and GLMPSAPSPV (SEQ ID NO:11).

26. (Original) A method of claim 21, wherein said peptide has an amino acid sequence selected from the group consisting of GVFPSAPSPV (SEQ ID NO:6), YVFPSAPSPV (SEQ ID NO:7), GLFPSAPSPV (SEQ ID NO:8), GVMPSAPSPV (SEQ ID NO:9), YLFPSAPSPV (SEQ ID NO:10), and GLMPSAPSPV (SEQ ID NO:11).

27. (Original) A method of claim 21, further comprising administering an immunostimulant or an antagonist of immunosuppressive cytokines.

28. (Original) An isolated nucleic acid encoding a peptide of fifty or fewer amino acids, said peptide comprising a sequence $X_1X_2X_3PSAPSPX_4$ (SEQ ID NO:5), wherein:

X_1 can be any amino acid;

X_2 can be L, M, A, I, V, or T;

X_3 can be a hydrophobic residue, methionine, or alanine; and

X_4 can be V, M, L, A, I, or T.

29. (Original) An isolated nucleic acid of claim 28, wherein X_1 is tyrosine (SEQ ID NO:34).

30. (Currently amended) An isolated nucleic acid of claim 28, wherein X_2 is leucine (SEQ ID NO:35).

31. (Currently amended) An isolated nucleic acid of claim 28, wherein X_3 is methionine (SEQ ID NO:36).

32. (Original) An isolated nucleic acid of claim 28, wherein said peptide comprises an amino acid sequence selected from the group consisting of GVFPSAPSPV (SEQ ID NO:6), YVFPSAPSPV (SEQ ID NO:7), GLFPSAPSPV (SEQ ID NO:8), GVMPSAPSPV (SEQ ID NO:9), YLFPSAPSPV (SEQ ID NO:10), and GLMPSAPSPV (SEQ ID NO:11).

33. (Original) An isolated nucleic acid of claim 28, wherein said peptide has an amino acid sequence selected from the group consisting of GVFPSAPSPV (SEQ ID NO:6), YVFPSAPSPV (SEQ ID NO:7), GLFPSAPSPV (SEQ ID NO:8), GVMPSAPSPV (SEQ ID NO:9), YLFPSAPSPV (SEQ ID NO:10), and GLMPSAPSPV (SEQ ID NO:11).

34. (Original) A vector comprising a nucleic acid sequence of claim 28 operably linked to a promoter.

35. (Original) A vector of claim 34, wherein said nucleic acid sequence encodes a peptide comprising an amino acid sequence selected from the group consisting of GVFPSAPSPV (SEQ ID NO:6), YVFPSAPSPV (SEQ ID NO:7), GLFPSAPSPV (SEQ ID NO:8), GVMPSAPSPV (SEQ ID NO:9), YLFPSAPSPV (SEQ ID NO:10), and GLMPSAPSPV (SEQ ID NO:11).

36. (Original) A composition comprising a vector of claim 34 and a pharmaceutically acceptable carrier.

37. (Original) A composition of claim 36, wherein said vector encodes a peptide comprising an amino acid sequence selected from the group consisting of GVFPSAPSPV (SEQ ID NO:6), YVFPSAPSPV (SEQ ID NO:7), GLFPSAPSPV (SEQ ID NO:8), GVMPSAPSPV (SEQ ID NO:9), YLFPSAPSPV (SEQ ID NO:10), and GLMPSAPSPV (SEQ ID NO:11).

38-39. Canceled.

40. (Currently amended) A method of inhibiting the growth of an XAGE-1-expressing cancer cell in a subject, said method comprising administering to said subject an isolated nucleic acid sequence encoding a peptide of fifty or fewer amino acids, said peptide comprising of the sequence $X_1X_2X_3PSAPSPX_4$ (SEQ ID NO:5), wherein: X_1 can be any amino acid; X_2 can be L, M, A, I, V, or T; X_3 can be a hydrophobic residue, methionine, or alanine; and X_4 can be V, M, L, A, I, or T; wherein administration of said nucleic acid sequence results in

expression of said peptide, which expression stimulates or activates cytotoxic T lymphocytes, thereby inhibiting the growth of said XAGE-1-expressing cancer cell.

41. (Currently amended) A method of claim 40, wherein X₁ is tyrosine (SEQ ID NO:34).

42. (Currently amended) A method of claim 40, wherein X₂ is leucine (SEQ ID NO:35).

43. (Currently amended) A method of claim 40, wherein X₃ is methionine (SEQ ID NO:36).

44. (Original) A method of claim 40, wherein said peptide comprises an amino acid sequence selected from the group consisting of GVFPSAPSPV (SEQ ID NO:6), YVFPSAPSPV (SEQ ID NO:7), GLFPSAPSPV (SEQ ID NO:8), GVMPSAPSPV (SEQ ID NO:9), YLFPSAPSPV (SEQ ID NO:10), and GLMPSAPSPV (SEQ ID NO:11).

45. (Original) A method of claim 40, wherein said peptide has an amino acid sequence selected from the group consisting of GVFPSAPSPV (SEQ ID NO:6), YVFPSAPSPV (SEQ ID NO:7), GLFPSAPSPV (SEQ ID NO:8), GVMPSAPSPV (SEQ ID NO:9), YLFPSAPSPV (SEQ ID NO:10), and GLMPSAPSPV (SEQ ID NO:11).

46. (Original) A method for stimulating or expanding T cells, or both, comprising contacting T cells with a synthetic or recombinant amino acid sequence X₁X₂X₃PSAPSPX₄ (SEQ ID NO:5), wherein: X₁ can be any amino acid; X₂ can be L, M, A, I, V, or T; X₃ can be a hydrophobic residue, methionine, or alanine; and X₄ can be V, M, L, A, I, or T; thereby stimulating or expanding said T cells, or both.

47. (Original) A method of claim 46, wherein X₁ is tyrosine (SEQ ID NO:34).

48. (Original) A method of claim 46, wherein X₂ is leucine (SEQ ID NO:35).

49. (Original) A method of claim 46, wherein X₃ is methionine (SEQ ID NO:36).

50. (Original) A method of claim 46, wherein said peptide comprises an amino acid sequence selected from the group consisting of GVFPSPSPV (SEQ ID NO:6), YVFPSPSPV (SEQ ID NO:7), GLFPSPSPV (SEQ ID NO:8), GVMPSAPSPV (SEQ ID NO:9), YLFPSPSPV (SEQ ID NO:10), and GLMPSAPSPV (SEQ ID NO:11).

51. (Original) A method of claim 46, wherein said peptide has an amino acid sequence selected from the group consisting of GVFPSPSPV (SEQ ID NO:6), YVFPSPSPV (SEQ ID NO:7), GLFPSPSPV (SEQ ID NO:8), GVMPSAPSPV (SEQ ID NO:9), YLFPSPSPV (SEQ ID NO:10), and GLMPSAPSPV (SEQ ID NO:11).

52. (Original) A method of claim 46, wherein said T cells are isolated from bone marrow, or a fraction thereof, of a patient.

53. (Original) A method of claim 46, wherein said T cells are isolated from peripheral blood, or a fraction thereof, of a patient.

54. (Original) A method of claim 46, wherein said T cells are contacted with said peptide by contacting said T cells with an antigen presenting cell pulsed with, transduced to express, or differentiated from a cell transduced with a nucleic acid encoding, said peptide.

55. (Original) A method of claim 46, wherein said T cells are contacted with an antigen presenting cell pulsed with, transduced to express, or differentiated from a cell transduced with a nucleic acid encoding, a peptide having an amino acid sequence selected from the group consisting of GVFPSPSPV (SEQ ID NO:6), YVFPSPSPV (SEQ ID NO:7), GLFPSPSPV (SEQ ID NO:8), GVMPSAPSPV (SEQ ID NO:9), YLFPSPSPV (SEQ ID NO:10), and GLMPSAPSPV (SEQ ID NO:11).

56. (Original) A method of claim 46, wherein said T cells are CD8⁺ T cells.

57. (Original) A method for stimulating or expanding T cells comprising contacting said T cells with an antigen presenting cell pulsed with, transduced to express, or differentiated from a cell transduced with a nucleic acid encoding, an amino acid sequence of $X_1X_2X_3PSAPSPX_4$ (SEQ ID NO:5), wherein: X_1 can be any amino acid; X_2 can be L, M, A, I, V, or T; X_3 can be a hydrophobic residue, methionine, or alanine; and X_4 can be V, M, L, A, I, or T.

58. (Original) A method of claim 57, wherein X_1 is tyrosine (SEQ ID NO:34).

59. (Original) A method of claim 57, wherein X_2 is leucine (SEQ ID NO:35).

60. (Original) A method of claim 57, wherein X_3 is alanine (SEQ ID NO:36).

61. (Original) A method of claim 57, wherein said peptide comprises an amino acid sequence selected from the group consisting of GVFPSPSPV (SEQ ID NO:6), YVFPSPSPV (SEQ ID NO:7), GLFPSPSPV (SEQ ID NO:8), GVMPSAPSPV (SEQ ID NO:9), YLFPSPSPV (SEQ ID NO:10), and GLMPSAPSPV (SEQ ID NO:11).

62. (Original) A method of claim 57, wherein said peptide has an amino acid sequence selected from the group consisting of GVFPSPSPV (SEQ ID NO:6), YVFPSPSPV (SEQ ID NO:7), GLFPSPSPV (SEQ ID NO:8), GVMPSAPSPV (SEQ ID NO:9), YLFPSPSPV (SEQ ID NO:10), and GLMPSAPSPV (SEQ ID NO:11).

63. (Currently amended) A method of inhibiting the growth of a cancer cell expressing XAGE-1 comprising contacting said cell with [[a]] an isolated cytotoxic T lymphocyte specific for a peptide comprising an amino acid sequence of $X_1X_2X_3PSAPSPX_4$ (SEQ ID NO:5), wherein: X_1 can be any amino acid; X_2 can be L, M, A, I, V, or T; X_3 can be a hydrophobic residue, methionine, or alanine; and X_4 can be V, M, L, A, I, or T.

64. (Original) A method of claim 63, wherein said peptide comprises an amino acid sequence selected from the group consisting of GVFPSPSPV (SEQ ID NO:6),

YVFPSAPSPV (SEQ ID NO:7), GLFPSAPSPV (SEQ ID NO:8), GVMPSAPSPV (SEQ ID NO:9), YLFPSAPSPV (SEQ ID NO:10), and GLMPSAPSPV (SEQ ID NO:11).

65. (Original) A method of claim 63, wherein said peptide has an amino acid sequence selected from the group consisting of GVFPSAPSPV (SEQ ID NO:6), YVFPSAPSPV (SEQ ID NO:7), GLFPSAPSPV (SEQ ID NO:8), GVMPSAPSPV (SEQ ID NO:9), YLFPSAPSPV (SEQ ID NO:10), and GLMPSAPSPV (SEQ ID NO:11).

66-74. (Canceled)

75. (New) A peptide of claim 1, wherein said peptide is 20 amino acids or fewer.

76. (New) A composition of claim 8, wherein said peptide is 20 amino acids or fewer.

77. (New) A method of claim 21, wherein said peptide is 20 amino acids or fewer.

78. (New) A nucleic acid of claim 28, wherein said peptide is 20 amino acids or fewer.

79. (New) A method of claim 40, wherein said peptide is 20 amino acids or fewer.